

REVISION OF THE GENUS *HETERONYX*, WITH  
DESCRIPTIONS OF NEW SPECIES.

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PART II.

The species of *Heteronyx* to be dealt with in this second part of my memoir form a group distinguished from the other groups of *Heteronyx* by the possession of the following characters in combination, viz.,—upper margin of labrum rising above the plane of the clypeus, antennæ 8-jointed, claws appendiculate. No species previously described have had all these characters definitely attributed to them by their authors, although several (in all probability) possess them. *H. unicolor*, Blanch., is doubtful only in respect of its labrum (the author merely specifying that its labrum is visible from above, whence it might belong either to this group or to the group of what I have called intermediate forms); there are independent objections however to identifying with it any of the species before me. *H. (Silopa) glabrata*, Er., *fumata*, Er., and *nigella*, Er., are all described by their author as having 9-jointed antennæ and bifid claws, but M. Lacordaire has since asserted that their antennæ consist of eight joints only, and that the claws of *nigella* are appendiculate; if this be correct, *nigella* at least would fall into the group treated of in this present article, and (as will appear below) I have identified with it an insect sent to me from Tasmania (Erichson's locality for all the three just named) by Mr. Sloane and the Hon. W. Macleay, the latter of whom had attached the name to it. *Glabrata* is a glabrous species of more than average size, while *fumata* is described as having the prothorax not narrowed in

front, and the head rather obsoletely punctured; no species before me seems to agree with either in these respects. Of Burmeister's species *H. nigricans* and *spadicea* in all probability come in here; but the absence of any exact description of the labrum and of any mention of the claws renders it impossible to be quite certain; they are both from W. Australia, a locality from which I have only seen a single species of *Heteronyx* of this section; it agrees fairly well with the description, such as it is, of *H. nigricans* with which I have consequently considered it identified. *H. spadicea*, Burm., (assuming its place in this section) might not improbably resemble *H. Augustæ*, mihi; but the description is so vague—giving no information for example as to the relative size of the metasternum and hind coxæ—that it is scarcely possible to make a *guess*, unless one happened to have before one a specimen agreeing with the brief description, and taken in W. Australia, as in the case of the specimen I have regarded as being *H. nigricans*. With the exception of Mr. Macleay's species the above are all of those previously described whose recorded characters would not exclude them from this section. Mr. Macleay's descriptions of *Heteronyx* have unfortunately in general omitted the mention of such characters as the number of joints in the antennæ, the structure of the claws, &c., &c. The Hon. gentleman has, with the utmost courtesy, lent me types of as many of these as possible; but there still remain the following, viz., *H. concolor*, *infuscatus*, *pallidulus*, *pubescens*, *ruficollis*, *substriatus*, *parvulus* (all from Queensland), and *transversicollis*, *subglaber*, *subvittatus* (all from N.W. Australia), which there is no possible course but to disregard altogether until such time as specimens taken in Queensland or N.W. Australia, and agreeing with the descriptions, shall furnish some tangible ground for identification. As none of the new species here described as belonging to this section are from either of these localities, it is, however, improbable that any are identical with any of Mr. Macleay's species.

The task of characterising the species before me (possessing the combination of characters mentioned above) in such manner that

they may be identified with some ease and confidence has proved no easy one. I think, however, that I have succeeded in specifying characters which will at least prevent the confusion *inter se* of any of those dealt with in this memoir; but in order to do so I have had to avail myself of characters that require some preliminary observations.

I find that not a few species of *Heteronyx* are distinguished from their nearest allies by little that is tangible except differences in puncturation, and in the relations to each other of the labrum and clypeus. Though these distinctions are abundantly satisfactory as separating the species, they are nevertheless of *degree* and difficult to render available to the reader of a memoir. The former of them I attempt to indicate (as regards the prothorax) by specifying that "closely" punctulate means in the tabulation having the punctures so placed that twenty or more might run down the middle of the disc if they were placed in a longitudinal line and at about what is actually their average distance one from another. The relation of the labrum to the clypeus (*i.e.*, the extent transverse and vertical of the portion of the former overtopping the plane of the latter, and the convexity of the curve of the former) seems to be a very important and reliable character for distinguishing one species from another, but it is extremely difficult to express in definite terms. After much consideration I have adopted a method of expression that I now proceed to explain. If a specimen of *Heteronyx* belonging to this section be viewed from above it will be found that there is a certain point of view (a point perpendicularly above the suture of the elytra, from which the eye looks more or less obliquely forward along the surface of the insect) whence the outline of the front of the head, from eye to eye, appears as a continuous trisinate or trilobed curve. The nature of this curve depends entirely upon the relation of the labrum to the clypeus, and therefore seems fitted to serve as an index of that relation; I find it very constant in individuals of the same species. In the following descriptions this curve when spoken of is called the "trilobed outline" of the head. In species whose clypeus is deeply and widely emarginate,

while the labrum is strongly narrowed upward (e.g. *H. nasutus*, *mihi*), this structure is very conspicuous; while in some whose clypeus is but little emarginate, while the labrum is feebly curved above and feebly elevated (e.g. *H. debilis*, *mihi*), the outline of the head from the most favourable point of view,—which is a point whence the sight is almost parallel to the surface of the head,—is a curve in which the sinuations are little noticeable. In order to compare the lobes of this “trilobed outline” in definite terms, I call the length of a straight line joining the extremities of the free outline of each lobe the “width” of that lobe, and by the “length” of the lobe I mean the distance that it projects outward from that line.

To minimise words in the following descriptions I call the fringe of stout hairs running along the sides of the elytra “normal,” when it is not continued in any markedly conspicuous manner round the apex.

It should also be noted that whenever the “length” of the metasternum is referred to, its length is to be measured along the suture between it and its episternum.

The hind angles of the prothorax as seen from above are in many cases not the real angles formed by the meeting of the lateral and posterior reflexed margins, and consequently they present different appearances from different points of view. To meet this difficulty I have in every case described the hind angles of the prothorax as they appear from directly above the middle longitudinal line of the insect, selecting in the line thus indicated the point from which the angles appear most strongly defined.

Tabulation of the groups of *Heteronyx* thus far dealt with, inclusive of those in the present memoir:—

Section I.—Clypeus altogether above the summit of the labrum (as in most other Melolonthidæ). *Vide* P.L.S. N.S.W. (2) III., p. 1328.

Section II.—Intermediate forms,—in which the labrum is turned upward, and nearly or quite rises to the level of the plane of the clypeus, but does not overtop it (*l.c.* p. 1353).

Section III.—Labrum turned upward and overtopping the plane of the clypeus. (By far the largest Section,—subdivided as follows):—

Group 1.—Antennæ 8-jointed.

Subgroup 1.—Claws bifid. (*l.c.* p. 1359).

Subgroup 2.—Claws appendiculate. (The subject of the present memoir.)

Group 2.—Antennæ 9-jointed. (To be dealt with in next memoir.)

Tabulation of the species dealt with in the present memoir:—

- A. Hind coxæ at their longest not (or scarcely\*) shorter than the suture between the metasternum and its episterna.
- B. Elytra furnished with fine short adpressed pubescence.
- C. Elytra not granuliferous.
- D. Puncturation of hind coxæ rather close on external half of the surface (size large)..... *normalis*, Blackb.
- DD. Puncturation of hind coxæ at its closest only very sparing (size very small)..... *brevicornis*, Blackb.
- CC. Elytra granuliferous..... *granulifer*, Blackb.
- BB. Elytra bearing only long isolated more or less erect hairs (as in *H. fulvohirtus*, Blackb.) ..... *nasutus*, Blackb.

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\*I have added this saving clause,—but I find that in the 4 species actually included under this heading the metasternum is in no case *noticeably* longer than the hind coxæ, although measurement in two of them proves that it is very slightly so.

- AA. Hind coxæ distinctly shorter than the suture between the metasternum and its episterna. ....
- B. Hind coxæ distinctly longer than external margin of 2nd ventral segment. ....
- C. Puncturation of elytra very close and more or less confluent (as in *H. piceus*, Blanch., *horridus* and *normalis*, Blackb., &c. ....
- D. Puncturation of elytra smooth and very minute. ....
- E. Lateral margins of clypeus convergent (hindward) close to the eye. .... *Mulvalensis*, Blackb.
- EE. Lateral margins of clypeus divergent (hindward) quite to the eye. .... *punctipennis*, Blackb.
- DD. Puncturation of elytra coarser and subrugulose. .... *nigricans*, Burm.
- CC. Puncturation of elytra less close and more isolated (as is usual in the genus). ....
- D. Labrum uniformly rugulose. ...
- E. Prothorax fully twice as wide as long. .... *piger*, Blackb.
- EE. Prothorax less than twice as wide as long. .... *raucinasus*, Blackb.
- DD. Labrum not uniformly rugulose. ....
- E. Prothorax closely punctulate [intervals between punctures  $\frac{1}{20}$  (or less) the length of the segment.] ....

- F. General puncturation more or less coarse, and not uniform over upper surface .....
- G. Club of antennæ black... *nigellus*, Er.
- GG. Club of antennæ yellow *dubius*, Blackb.
- FF. Puncturation fine and uniform (though not minute and confluent as in *punctipennis*, &c.) Size over 5 lines ..... *constans*, Blackb.
- EE. Prothorax more sparingly punctulate. ....
- F. Prothorax only moderately narrowed forward (base not more than  $\frac{1}{2}$  again as wide as front) .....
- G. Middle lobe of "trilobed outline" of head at least half as wide as lateral lobes .....
- H. Lateral margins of clypeus nearly straight..... *electus*, Blackb.
- HH. Lateral margins of clypeus normally curved..... *cygneus*, Blackb.
- GG. Middle lobe of "trilobed outline" of head appearing evidently less than half as wide as lateral lobes ..... *auricomus*, Blackb.
- FF. Prothorax more strongly narrowed forward (base more than  $\frac{1}{2}$  again as wide as front). ....

- G. Ventral segments closely covered in the middle with strongly defined fine puncturation ..... *anceps*, Blackb.
- GG. Ventral segments in the middle at most feebly and not closely punctured.....
- H. Hind angles of prothorax quite rounded off .....
- I. General puncturation of upper surface exceptionally coarse and strong..... *crassus*, Blackb.
- II. Puncturation of prothorax fine, of elytra moderate ... *Augustæ*, Blackb.
- HH. Hind angles of prothorax from a certain point of view well defined ..... *Sloanei*, Blackb.
- BB. Hind coxæ not longer than external margin of 2nd ventral segment...
- C. "Trilobed outline" of head not well developed; middle lobe much more than  $\frac{1}{2}$  as wide as lateral ones.....
- D. Hind angles of prothorax from some point of view appearing acute or sharply rectangular...
- E. Clypeal suture strongly elevated ..... *dentipes*, Blackb.
- EE. Clypeal suture obscure ..... *debilis*, Blackb.



DD. Hind angles of prothorax quite obtuse or rounded off..... *jejunus*, Blackb.

CC. "Trilobed outline" of head well-developed; middle lobe scarcely half as wide as lateral ones..... *lateritius*, Blackb.

#### HETERONYX NORMALIS, sp.nov.

Minus elongatus; sat convexus; pone medium leviter dilatatus; minus nitidus; piceus vel ferrugineus; pilis pallidis brevibus adpressis (nonnullis longioribus erectis intermixtis) vestitus; subæqualiter crebre subtilius punctulatus; labro clypeum late sat fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long. 4-5½, lat. 2-3 lines.

Labrum decidedly overtopping level of clypeus which is widely and roundly emarginate in front; "trilobed outline" of head having the lobes feebly convex, the middle one not very much narrower than the others; clypeal suture well defined, straight and impressed; head (especially the clypeus) a little more strongly sculptured than the rest of the body. Prothorax nearly twice as wide as long, and nearly twice as wide at base as at front which is strongly concave, with sharp well-produced angles; the sides are gently arched converging slightly from base to middle, thence more strongly; the hind angles viewed from above appear fairly well defined but not sharp nor directed hindward; the base is bisinuate and widely lobed in the middle. The elytra have more or less appearance of striation (in one example before me it is quite well marked); their transverse wrinkling is fine but distinct (especially in front); the lateral fringes are not carried round the apex, which is truncate with a narrow but distinct membranous border. The puncturation of the whole upper surface is fine, close, and even, with a tendency to become fainter and less close from the clypeus hindward, till on the pygidium (which is subgranulate) it is feeble and hardly close; it resembles that of *H. insignis*, Blackb. The metasternum and hind coxæ are of equal

length and are rather finely and closely punctured externally ; the metasternum a little more sparingly towards the middle, where the hind coxæ are almost impunctate. The ventral segments are punctured almost as the metasternum. The ventral series consist of stout hairs and are well defined. The hind femora are decidedly wider than the intermediate, their inner apical angle very obtuse and scarcely prominent. The uppermost tooth on the anterior tibiæ is small but sharp.

S. Australia ; widely distributed ; also Kangaroo Island.

#### H. GRANULIFER, sp.nov.

Sat elongatus ; minus convexus ; pone medium vix dilatatus ; sat nitidus ; ferrugineus ; pilis pallidis brevibus adpressis (non nullis perlongis, e granulis squamosis orientibus, intermixtis) vestitus ; capite et elytris crebrius sat crasse, prothorace et pygidio sparsius subtilius, punctulatis ; labro clypeum minus late minus fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis. [Long.  $4\frac{4}{5}$ , lat.  $2\frac{3}{5}$  lines (vix).

Labrum decidedly overtopping level of clypeus which is gently emarginate in front ; "trilobed outline" of head having the lobes feebly convex, the middle one about half as wide as the others ; clypeal suture fairly defined, straight, and impressed, clypeus forming an even surface with the rest of the head. Prothorax nearly twice as wide as long down the middle and more than half as wide again at base as at front which is moderately concave with sharp moderately produced angles ; the sides are evenly and gently arched, most divergent immediately in front of the base ; the hind angles viewed from above appear very ill-defined but not quite rounded off ; the base is bisinuate, widely and feebly lobed in the middle ; the elytra (in the example before me) have no trace whatever of striation ; their transverse wrinkling is coarse and rather conspicuous ; the lateral fringe is much abraded in the example before me but evidently is not in a fresh specimen carried round the apex in any conspicuous manner ; the apex has an obscure membranous border. The puncturation of the whole

upper surface except the pygidium is very much coarser and less close than in *H. normalis*. The hind coxæ are scarcely so long (by measurement) as the suture between the metasternum and its episterna ; the metasternum is closely and rather finely punctured externally, less closely and more coarsely towards the middle ; the hind coxæ are punctured a little more strongly and less closely than the metasternum externally but are almost impunctate in their inner half. The basal ventral segment is punctured sparingly and moderately strongly on the sides, sparingly and faintly in the middle ; the other ventral segments are successively more and more feebly punctulate. The ventral series consist of stout hairs rising from granules and are very well defined. The hind femora are considerably wider than the intermediate, their inner apical angle well produced but rather obtuse. The uppermost tooth on the anterior tibiæ is strong (about half as large as the intermediate) and moderately sharp.

Roseworthy, S.A.

#### H. NASUTUS, sp.nov.

Sat elongatus ; sat convexus ; pone medium minus dilatatus ; sat nitidus ; ferrugineus ; pilis flavis elongatis sat sparsim vestitus ; corpore supra crasse sat sparsim (capite minus sparsim, elytris apice pygidioque subtiliter) punctulatis ; labro clypeum anguste sat fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis. [Long.  $4\frac{2}{5}$ , lat.  $2\frac{1}{5}$  lines.

Clypeus with strongly and widely reflexed margins, strongly emarginate in middle ; "trilobed outline" of head having the lobes very strong, the middle one barely a third as wide as either of the others, about equal to them in length ; clypeal suture well defined, impressed, and strongly angulated in the middle, clypeus not forming an evenly continuous plane with the rest of the head. Prothorax about twice as wide as long down the middle and scarcely a third again as wide at base as at front which is moderately concave with sharp moderately produced angles ; the sides converging in a slight curve from base to front ; the hind angles viewed

from above appear fairly defined and obtuse; the base is feebly bisinuate, widely and feebly lobed in the middle. Elytra (of the example before me) without trace of striation, their transverse wrinkling coarse and fairly conspicuous; lateral fringe normal, apex with well defined membranous border. The puncturation is much coarser and stronger than in *H. granulifer*, and on the whole upper surface much resembles that of *H. fulvohirtus* (Sect. I.) Hind coxæ scarcely so long as the metasternum which is strongly punctured,—closely at the sides, sparingly in the middle,—the former being closely and strongly punctured throughout, and also finely coriaceous. The ventral segments are finely coriaceous, with tuberculous puncturation, which is strong and rather sparing at the sides,—nearly obsolete in the middle. The ventral series consist of moderately stout hairs and are fairly conspicuous. The hind femora are much wider than the intermediate and have their inner apical angle fairly prominent, but much rounded off. The anterior tibiæ are much like those of *H. granulifer*.

N. Territory of S. Australia.

#### H. BREVICORNIS, sp.nov.

Elongatus; sat convexus; pone medium vix dilatatus; minus nitidus; pallide fuscus vel ferrugineus; pilis subtilibus adpressis minus dense vestitus; capite crasse minus crebre (clypeo magis crebre), prothorace subtilius sat sparsim, elytris subtilius crebrius, pygidio sparsissime, punctulatis; labro clypeum late sat fortiter superanti; antennis 8-articulatis brevibus; unguiculis appendiculatis. [Long.  $2\frac{1}{5}$ - $2\frac{3}{5}$ , lat.  $1$ - $1\frac{1}{5}$  lines (vix.)

Clypeus almost truncate in front where there is no distinct reflexed margin; "trilobed outline" of head having the middle lobe quite as wide as the lateral ones and about equal to them in length, but (owing to forward protrusion of labrum) projecting forward beyond them; clypeal suture nearly straight, ill-defined; clypeus forming an almost evenly continuous surface with the rest of the head. Prothorax about half again as wide as long down

the middle, its base about half again as wide as its front which is lightly emarginate with very feebly produced angles; the sides diverge strongly from the apex to the middle where they are rounded and whence they converge slightly to the base with which their hind angles are almost rounded off; the base is scarcely distinctly bisinuate or lobed, but is almost evenly rounded all across. Elytra with no trace of striation except a fairly defined sutural stria; their transverse wrinkling scarcely perceptible; lateral fringe feeble and not continuous round apex which has a scarcely noticeable membranous border. The puncturation of the upper surface resembles that of *H. testaceus*, Blackb., (Sect. I.), but is feebler except on the head. Hind coxæ about as long as meta sternum, the puncturation of both being feeble and sparse (especially in the middle). The ventral segments are scarcely distinctly punctulate. The ventral series consist of long erect hairs and are very conspicuous, but obsolete in the middle. The hind femora are not very much wider than the intermediate and have their inner apical angle very feeble. The lower two teeth of the anterior tibiæ are very strong and sharp,—the uppermost tooth is obtuse and subobsolete.

S. Australia (Port Lincoln; also near Adelaide).

#### H. PUNCTIPENNIS, sp.nov.

Minus elongatus; latus; sat convexus; pone medium sat dilatatus; minus nitidus; obscure ferrugineus, antennis palpisque rufo-testaceis; pilis brevibus adpressis vestitus; clypeo creberrime rugulose, capite postice sat fortiter minus crebre, prothorace minus fortiter sat crebre, elytris crebre subtiliter squamose, pygidio fortius crebrius, punctulatis; tibiæ anticarum dentibus externis inferioribus perlongis; labro clypeum late minus fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long. 4, lat.  $2\frac{1}{2}$  lines.

Clypeus gently emarginate in front, its reflexed margin obsolete in the middle part; "trilobed outline" of head as in *H. debilis*



except that the middle lobe appears proportionally narrower owing to the greater convexity of the upper outline of the labrum ; clypeus almost forming an even surface with the rest of the head ; clypeal suture slightly wavy and not well marked. Prothorax very nearly twice as wide as long down the middle, its base more than half again as wide as its front which is only gently emarginate, with angles but little produced ; its sides diverge in a slight curve from the apex to the base with which they form angles that from a certain point above appear quite sharp, and somewhat directed hindward ; the base rather feebly bisinuate and moderately lobed in the middle. Elytra with little or no indication of striæ, their transverse wrinkling very fine, but from some points of view fairly distinct, their lateral fringes normal, their membranous apex well defined. The puncturation of the prothorax is evidently coarser, and that of the elytra evidently more minute, than in *H. normalis*. The hind femora are moderately wider than the intermediate, with their inner apical angle feeble and rounded. The hind coxæ are considerably shorter than the metasternum and evidently longer than the second ventral segment. The metasternum and hind coxæ are rather strongly and closely punctulate at the sides, the puncturation continuing more markedly than in most species across the middle, the latter having a smooth portion only towards the antero-internal corner. The hind body is punctured a little less strongly, the punctures being much enfeebled in the middle. The ventral series consist of fine hairs and are not very conspicuous. On the anterior tibiæ the lower teeth are long and sharp, but the uppermost is very small, evidently less than half the second.

Adelaide district.

*H. MULWALENSIS*, sp.nov.

Sat elongatus ; postice vix dilatatus ; sat convexus ; ferrugineus, antennis palpisque testaceis ; pilis adpressis vestitus ; capite toto creberrime æqualiter rugulose, elytris crebre subtiliter, pygidio sparsius sat subtiliter, punctulatis ; tibiæ anticarum dentibus

externis inferioribus validis; labro clypeum late sat fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long.  $4\frac{4}{5}$ - $5\frac{1}{5}$ , lat.  $2\frac{3}{10}$ - $2\frac{2}{5}$  lines.

Closely allied to *H. punctipennis*, the description of which may be taken as applying to it except in so far as here modified. The "trilobed outline" of the head is much more conspicuous owing to the greater prominence of the labrum, the middle lobe appearing slightly narrower in proportion (*i.e.*, very little more than half as wide as the lateral ones); the plane of the clypeus is rather more distinct from that of the rest of the head and its lateral margins are more dilated, their outline being moreover angularly contracted at its base close in front of the eye (instead of forming an even gentle curve from the eye to the front); the entire head is very finely, closely, evenly and rugosely punctulate instead of having (as *H. punctipennis* has) the portion behind the clypeal suture very much more sparingly punctulate than the clypeus. The prothorax is slightly less wide in proportion to its length. The surface of the front face of the labrum is roughened and granulose, while in *punctipennis* it is smooth, nitid, and finely punctulate.

Mulwala, N.S.W.; taken by Mr. T. G. Sloane.

#### H. NIGRICANS, Er.

Sat elongatus; sat convexus; postice vix dilatatus; sat nitidus; piceo-niger, antennis palpisque testaceis, tarsis rufescentibus; pilis brevibus albidis adpressis sat sparsim vestitus; supra fortius sat crebre æqualiter (pygidio sparsim excepto) punctulatus; tibiarum anticarum dentibus externis inferioribus robustis acutis; labro clypeum late minus fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis. [Long. 4, lat.  $2\frac{1}{5}$  lines (vix).

Clypeus scarcely emarginate in front, its reflexed margin very fine but continuous; "trilobed outline" of head fairly defined, the middle lobe appearing decidedly narrower than the lateral ones; clypeus not forming an even surface with the rest of the head;

clypeal suture well marked and gently arched. Prothorax decidedly less than twice as wide as it is long, its base about half again as wide as its front which is rather strongly emarginate and subbisinuate, with angles little advanced and not very pointed; its sides are gently arched but scarcely convergent from the middle to the base; the hind angles viewed from a certain point above appear fairly defined and a little directed hindward but not sharp; the base moderately bisinuate and moderately lobed in the middle. Elytra with some indication of striæ, their transverse wrinkling not conspicuous, their lateral fringes normal, their apical membrane fairly developed. The puncturation of the upper surface as a whole closely resembles that of *H. gracilipes*. The hind femora are moderately wider than the intermediate with their inner apical angle scarcely at all prominent. The hind coxæ are decidedly shorter than the metasternum but considerably longer than the second ventral segment. The metasternum is moderately coarsely punctured all across, the hind coxæ are punctured much like the metasternum but are lævigatae on the inner anterior portion. The ventral segments and anterior tibiæ scarcely differ from those of *H. punctipennis* except that the uppermost tooth of the latter is still less developed.

King George's Sound; in the collection of the Hon. W. Macleay.

#### H. RAUCINASUS, sp. nov.

Elongatus; sat convexus; postice leviter dilatatus; sat nitidus; piceo-ferrugineus, antennis palpisque testaceis, pilis adpressis sat brevibus albidis vestitus; capite crebre rugulose, prothorace sparsius fortiter, elytris squamose sat crebre, pygidio sparsim sat fortiter, punctulatis; tibiæ anticarum dentibus externis robustis; labro clypeum sat fortiter minus late superanti (illo antice ruguloso); antennis 8-articulatis; unguiculis appendiculatis.

[Long.  $4\frac{1}{5}$ , lat.  $2\frac{2}{5}$  lines.

Clypeus very slightly emarginate and with the reflexed margin scarcely indicated in the middle; "trilobed outline" of head well



defined, the middle lobe appearing not much more than half as wide as, but rather longer than, the lateral ones. The entire surface of the head is nearly even with scarcely a trace of a clypeal suture. Prothorax not much more than half again as wide as long; its base about half again as wide as front which is moderately emarginate with angles neither very prominent nor very sharp; it is slightly wider just behind the middle than at the base; sides gently arched; hind angles viewed from above appearing moderately distinct and rectangular but neither sharp nor noticeably directed hindward; the base feebly bisinuate and feebly lobed. Elytra with scarcely any indication of any (even a sutural) stria, their transverse wrinkling fairly conspicuous, their lateral fringes normal, their apical membrane rather indistinct. The puncturation of the elytra is much like that of *H. gracilipes* while the prothorax is considerably less closely punctured than in that species. The hind femora are not very much wider than the intermediate, their inner apical angle feebly prominent and much rounded. The hind coxæ, metasternum, ventral segments and legs agree with the description of those parts in *H. punctipennis* except that on the anterior tibiæ the teeth are evidently stouter, the uppermost being larger, moreover, in proportion to the others.

Adelaide district. A specimen (in the collection of the Hon. W. Macleay) from Gunning, N.S.W., seems to differ only in its darker colour.

#### H. FIGER, sp.nov.

Elongatus; sat convexus; postice vix dilatatus; sat nitidus; ferrugineus, antennis palpisque testaceis; pilis adpressis brevibus albidis vestitus; capite crebre rugulose, prothorace sat fortiter sat crebre (hoc quam longiori duplo latiori), elytris squamose sat crebre, pygidio sat fortiter sat crebre, punctulatis; tibiæ anticarum dentibus externis validis; labro clypeum sat late subfortiter superanti (illo antice ruguloso); antennis 8-articulatis; unguiculis appendiculatis. [Long. 6, lat.  $2\frac{2}{5}$  lines.

Clypeus moderately emarginate, its reflexed margin nearly obliterated in the middle; "trilobed outline" of head very well

defined, the middle lobe appearing not much more than half as wide as, and scarcely longer than, the lateral ones. Entire surface of head nearly even, with scarcely a trace of a clypeal suture. Prothorax just twice as wide as long, its base rather more than half again as wide as its front, which is moderately emarginate and gently bisinuate, with sharp but not very strongly produced angles; its sides are gently arched, and diverge from the front to near the base, thence becoming nearly parallel; hind angles (viewed from above) appearing defined, but hardly pointed, or directed hindward; base only feebly bisinuate and not strongly lobed in middle. Elytra with only sutural stria (and that not in all lights) distinct, their transverse wrinkling not conspicuous, their lateral fringes normal, their apical membrane obscure, their puncturation a trifle finer and closer than the same in *H. gracilipes* (the puncturation of the prothorax also being much as in that species). The hind femora are only moderately wider than the intermediate, their inner apical angle moderately prominent but not sharp. The hind coxæ, metasternum, and ventral segments do not seem to differ noticeably from the same in *H. punctipennis* and *raucinasus*, the teeth on the anterior tibiæ resembling those of the latter.

Taken at the Grange, near Adelaide.

#### H. CONSTANS, sp.nov.

Elongatus; sat convexus; postice leviter dilatatus; sat nitidus; piceo-niger, antennis palisque testaceis; pilis minus brevibus (nonnullis postice inclinatis, nonnullis erectis) fulvo-griseis conspicue sat dense vestitus; capite prothoraceque sat fortiter sat crebre, elytris squamose paullo minus crebre, pygidio (hoc longe hirsuto) sparsius fortius, punctulatis; tibiæ anticarum dentibus externis validis; labro clypeum minus late subfortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long.  $5\frac{2}{5}$ - $6\frac{2}{5}$ , lat.  $2\frac{1}{5}$ - $3\frac{1}{5}$  lines.

The head scarcely differs from that of *H. piger*, except that the upper outline of the labrum is a little more convex so that

the middle lobe of the "trilobed outline" appears a little narrower. The prothorax is about  $\frac{3}{4}$  again as wide as long, and the base is in about the same proportion wider than the front, which is deeply emarginate, with sharp prominent angles; the sides are nearly straight in their hinder half, thence converging arcuately to the front (the segment is slightly at its widest a little in front of, not *at*, the base), forming right angles (but somewhat rounded off at extreme apex) with the base—as viewed from above—the base being somewhat bisinuate and moderately lobed in the middle. The elytra have little or no trace of striation, their transverse wrinkling being fairly distinct, their lateral fringe normal, and their membranous apex fairly defined. The general puncturation of the upper surface resembles that of *H. gracilipes*—the prothorax being, however, rather less closely and less strongly, the elytra decidedly more squamosely, punctured. A marked character of the species is its decidedly close, not very short, pale dirty brown pubescence, which is for the most part inclined backward but not closely adpressed, with a good many erect hairs rather longer than the rest. The hind femora are considerably wider than the intermediate, their inner apical angle well produced but not sharp. The hind coxæ are only a little shorter than the metasternum and very much longer than the second ventral segment. The metasternum is rather strongly punctured all across—more closely at the sides than in the middle; the hind coxæ much more sparingly especially on the antero-internal region. The ventral segments are very distinctly punctulate, more closely and strongly at the sides than in the middle. The ventral series consist of long and rather fine hairs and are well defined. The teeth of the anterior tibiæ are very robust, the uppermost being decidedly more than half the size of the second tooth.

Widely distributed in S. Australia but apparently not very common.

#### H. NIGELLUS, Er.

Minus elongatus; convexus; postice leviter dilatatus; sat nitidus; nigro-piceus; sat sparsim griseo-pubescent; capite crebre

rugulose, prothorace fortiter minus crebre, elytris fortiter subquamosa minus crebre, pygidio (hoc capillis erectis dense vestito) crebre minus fortiter, punctulatis; tibiaram anticarum dentibus externis validis; labro clypeum minus late sat fortiter superanti; antennis 8-articulatis; tarsorum posticorum articulo basali secundo fere tertia parte breviori;\* unguiculis appendiculatis.

[Long. 4, lat.  $2\frac{1}{3}$  lines.]

Clypeus with a strongly reflexed margin obsolete in the middle, which is rather strongly emarginate; "trilobed outline" of head strongly defined—the middle lobe appearing less than half as wide, and the same length, as the lateral ones. The clypeus does not form an even surface with the rest of the head, and the clypeal suture is strongly impressed and somewhat angulated in the middle. The prothorax is slightly more than half again as wide as long, its base about half again as wide as its front, which is rather strongly emarginate with sharp prominent angles; the sides are nearly parallel in their basal half, thence arcuately converging forward and forming (as viewed from a particular point above) rather sharp right angles with the base, which is moderately bisinuate and rather strongly lobed in the middle. The transverse wrinkling of the elytra is only moderately defined, there is scarcely any trace of striation, the lateral fringe is normal, the apical membrane well defined. The general puncturation is coarser than in any of the species hitherto mentioned in this Memoir as common, but it nevertheless bears much resemblance to that of *H. gracilipes*. The hind femora are very little wider than the intermediate, their inner apical angle scarcely prominent. The hind coxæ are much shorter than the metasternum (both being rather strongly, and at the sides closely, punctured—the latter more sparingly in the middle, the former obsoletely in the antero-internal region) and very evidently longer

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\*The length of the basal joint is of course measured from its point of insertion within the apical cavity of the tibia; casually glanced at it appears even shorter still.

than the second ventral segment, which with the other ventral segments is punctured moderately all across. The ventral series are fine and not particularly conspicuous. The teeth of the anterior tibiæ are fairly robust and sharp, the uppermost being about half the size of the second.

N.B.—The identification of this insect has fared badly. The original description unfortunately omits the following characters without which certainty is hopeless apart from examination of the type, viz., the relation of the labrum and the clypeus to each other, the number of joints in the antennæ, and the details of the claws. The latter two are implied by the assignment of the species to *Silopa*, but as the acceptance of this evidence would place all Erichson's *Heteronyces* in one small group of the genus (viz., that with 9-jointed antennæ and claws bifid at the apex) it cannot be considered conclusive. Dr. Burmeister tabulates *H. nigellus*, Er., as having 9-jointed antennæ. M. Lacordaire expressly states that it has 8-jointed antennæ, but adds that its hinder claws are simple. The specimen described by me above was taken in Tasmania and bears the name "*nigellus*, Er.," in the collection of the Hon. W. Macleay. It agrees very fairly with Erichson's description except in being somewhat larger than the size given. But the character on which I rely most in its identification is the colour of the antennæ which are pitchy black with the base paler,—a character specially mentioned by Erichson, and of which I know scarcely another example among the species of *Heteronyx* that I have examined. I cannot help thinking that M. Lacordaire's observation of the claws was inaccurate.

#### H. DUBIUS, sp.nov.

Sat elongatus; postice minus dilatatus; sat convexus; piceo-ferrugineus, antennis palpisque testaceis, pedibus in parte et abdomine toto rufis; capite crebre rugulose, prothorace fortiter minus crebre, elytris fortiter subsquamose minus crebre, pygidio (hoc capillis erectis vestito) sat crebre minus fortiter, punctulatis; tibiarum anticarum dentibus externis inferioribus 2 validis; labro

clypeum sat late sat fortiter superanti ; antennis 8-articulatis ; tarsorum posticorum articulo basali secundo vix breviori\* ; unguiculis appendiculatis. [Long.  $4\frac{3}{5}$ , lat.  $2\frac{2}{5}$  lines (vix).

This insect is so close to *H. nigellus*, Er., that it would be waste of time and space to add to the above diagnosis more than a statement of the respects in which the description of *H. nigellus* would not agree with it. I distinguish it mainly by its testaceous antennæ, and the elongate basal joint of the posterior tarsi which (from its actual *root*) is scarcely shorter than the second joint. I observe also the following slight differences, viz., the colour in general (possibly only an individual peculiarity except in respect of the antennæ, which in no species that I have seen vary with the general colour of the surface), the wider and slighter situation of the clypeus in front displaying a wider piece of the labrum, the in general slightly closer puncturation of every part, the less developed apical membrane of the elytra and the much feebler uppermost tooth of the anterior tibiæ. The hind coxæ also are less narrowed inwards from the external margin, and (in the example before me) there is little or no pubescence on the prothorax and elytra,—except of course the fringes.

A single example was taken by Mr. J. G. O. Tepper, at Norton's Summit near Adelaide.

#### H. AURICOMUS, sp.nov.

Minus elongatus ; postice vix dilatatus ; sat convexus ; ferrugineus, antennis palpisque testaceis ; pilis aureo-brunneis sat dense vestitus ; capite crebre rugulose, prothorace elytrisque sat fortiter minus crebre, pygidio sat sparsim sat leviter, punctulatis ; tibiæ antice dentibus externis validis acutis ; labro clypeum minus late sat fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis. [Long. 4, lat. 2 lines.

Clypeus with reflexed margin not obsolete in middle which is distinctly emarginate ; “trilobed outline” of head only moderately

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\* Vide note on page 156.

defined, otherwise as that of *H. nigellus*; surface of clypeus not quite uniform with that of rest of head, clypeal suture fairly impressed and angulated. Prothorax about three-fifths again as wide as long, its base less than half again as wide as its front, which is moderately emarginate, with fairly prominent angles; the sides converge arcuately from base to front; most strongly near front; they form (viewed from above) strongly rounded angles with the base which is moderately bisinuate and feebly and widely lobed in the middle. The puncturation of the elytra is very uniform with that of the prothorax, except that it shows a little tendency to be squamose; the transverse wrinkling of the elytra is feeble, their lateral fringe normal, their apical membrane little defined. The prothorax is evidently more sparingly and feebly punctured than that of *H. nigellus*, *gracilipes*, &c., and much more closely than that of *Augustæ* and others; the elytra are more sparingly punctured than is usual in the genus. The hind femora are evidently wider than the intermediate, their inner apical angle rather feeble and blunt. The hind coxæ are considerably shorter than the metasternum and longer than the 2nd ventral segment. The description of the anterior tibiæ and the puncturation of the under surface in *H. nigellus* (above) may be applied to this species; the ventral series, however, seem more conspicuous than in *H. nigellus*, and the uppermost tooth on the anterior tibiæ is a little more acute.

Darling River; in collection of Hon. W. Macleay.

#### H. CYGNEUS, sp.nov.

Sat elongatus; postice vix dilatatus; sat convexus; ferrugineus; pilis sat dense vestitus; clypeo crebre rugulose, capite postice minus crebre, prothorace elytris que sat fortiter minus crebre, pygidio sat sparsim sat leviter, punctulatis; tibiæ anticarum dentibus externis inferioribus 2 validis; labro clypeum sat late sat fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long.  $3\frac{4}{5}$ , lat.  $1\frac{2}{5}$  lines.

Very close to *H. auricomus*, but differing as follows ; the labrum is more widely and strongly prominent so that the middle lobe of the "trilobed outline" appears longer than and more than half as wide as the lateral lobes ; the clypeus is less distinctly margined in the middle of its front ; the puncturation of the hind part of the head is much less uniform with that of the clypeus ; the hind angles of the prothorax are much better defined ; the apical membrane of the elytra is well defined ; the uppermost tooth on the anterior tibiæ is much feebler, being much less than half as large as the middle tooth, the external outline of the tibia (from its base to the apex of the uppermost tooth) being straight, whereas in *auricomus* that outline is more or less concave. The general form, moreover, is a little more elongate and parallel than that of *H. auricomus*.

Kangaroo Island ; taken by Mr. J. G. O. Tepper and others.

#### H. ELECTUS, sp.nov.

Sat elongatus ; postice vix dilatatus ; sat convexus ; ferrugineus, antennis pallidioribus ; pilis fulvis vestitus ; capite crasse rugulose, prothorace elytrisq̄ue sat fortiter sat sparsim, pygidio subtilius nec crebre, punctulatis ; tibiæ antice dentibus externis inferioribus 2 validis ; labro clypeum sat late sat fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis.

[Long.  $4\frac{2}{3}$ , lat.  $2\frac{1}{3}$  lines.

Clypeus with reflexed margin obsolete in middle which is widely and gently emarginate ; "trilobed outline" of head moderately defined, the middle lobe appearing more than half as wide and the same length as the lateral ones ; sides of clypeus less arched than in some species of the genus (e.g. *H. auricomus* and *cygneus*) ; surface of clypeus nearly uniform with that of rest of head ; clypeal suture feebly impressed and nearly straight. Prothorax not much less than twice as wide as long, the base nearly half again as wide as the front, which is rather strongly emarginate with sharp prominent angles, the sides gently rounded



forming (viewed from above) feeble obtuse angles with the base, which is scarcely bisinuate and but feebly lobed hindward all across. The puncturation of the elytra scarcely differs from that of the prothorax except in being a little squamose; the transverse wrinkling is well defined, the lateral fringe normal, the apical membrane well defined. The general puncturation resembles that of *H. auricomus*, but with the transverse wrinkling of the elytra much more conspicuous. The under surface and legs do not appear to differ noticeably from the same parts in *H. auricomus* except in the hind coxæ being a little narrower, and the uppermost external tooth on the front tibiæ considerably smaller; the external outline of the anterior tibia from its base to the apex of the uppermost tooth is almost quite straight in this species, while in *H. auricomus* it is quite strongly concave.

Port Lincoln; not rare.

N.B.—Some smaller specimens (long.  $3\frac{1}{2}$  lines)—also from Port Lincoln—are of a pale testaceous colour and seem to have the prothorax slightly more sparsely punctured, but I am not satisfied of their specific distinctness. They have the same slight but decided peculiarity in the nearly straight sides of the clypeus, giving the head in front of the eyes (from some points of view) something of the appearance of the sides presenting two truncate faces.

#### H. CRASSUS, sp. nov.

Minus elongatus; postice vix dilatatus; sat convexus; ferrugineus, antennis palpisque testaceis; pilis sat longis vestitus; clypeo crebre rugulose, capite postice sparsius rugulose, prothorace sparsim crasse, elytris crasse squamose nec crebre, pygidio subtilius sat crebre, punctulatis; tiliarum anticarum dentibus externis inferioribus 2 validis; labro clypeum sat late minus fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long.  $4\frac{2}{5}$  (vix), lat.  $2\frac{1}{5}$  lines.

Clypeus widely and feebly emarginate in front, its reflexed margin scarcely continuous; "trilobed outline" of head rather

feeble, the middle lobe appearing considerably more than half as wide as the lateral ones; surface of clypeus almost uniform with rest of head, clypeal suture finely impressed, angulated in middle. Prothorax about half again as wide as long, the base a little more than half again as wide as the front, which is rather strongly emarginate and slightly bisinuate with sharp prominent angles, the sides gently arched, the hind angles quite rounded off, the base scarcely bisinuate but moderately lobed hindward all across. The puncturation of the elytra is very squamose in appearance, the transverse wrinkling strongly defined, the lateral fringe normal, the apical membrane distinct. The sculpture of the upper surface is extremely like that of *H. fulvo-hirtus* (Section I. of the genus). The hind coxæ are much shorter than the metasternum and evidently longer than the second ventral segment. The under surface is rather evenly punctured, closely and moderately strongly on the sides,—more sparsely and feebly in the middle, the impunctate antero-internal space on the hind coxæ being scarcely noticeable. The ventral series are moderate; the hind femora moderately wider than the intermediate, their inner apical angle rounded and little prominent. The uppermost tooth on the anterior tibiæ is very small. The external outline of the tibia from its base to the apex of the uppermost tooth is straight.

Port Lincoln.

*H. AUGUSTÆ*, sp. nov.

Minus elongatus; postice sat dilatatus; sat convexus; ferrugineus, antennis palpisque testaceis; pilis pallidis vestitus; capite crebre rugulose, prothorace subtilius sat sparsim, elytris subtilius sat crebre squamose, pygidio leviter minus crebre, punctulatis; tiliarum anticarum dentibus externis validis; labro clypeum sat late sat fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long.  $5\frac{1}{4}$ , lat.  $2\frac{3}{8}$  lines.

The head scarcely differs from that of *H. crassus*; the labrum, however, rising slightly more above the level of the clypeus, and the puncturation of the hinder part of the head differing less

from that of the clypeus. The prothorax is nearly twice as wide as long, the base slightly more than half again as wide as the front, which is rather strongly emarginate with sharp prominent angles, the sides gently arched, the hind angles quite rounded off, the base evidently bisinuate and moderately lobed hindward in the middle. The puncturation of the elytra is rather fine and lightly impressed, not very close, very squamose in appearance, the transverse wrinkling well marked but fine, the lateral fringe normal, the apical membrane fairly defined. Of the commoner species perhaps *H. constans* comes nearest to this in respect of elytral puncturation, but the prothoracic sculpture resembles that of *H. fulvo-hirtus* and *crassus*, though evidently finer than in either of those species, and a little more sparing than in the former. The under surface and legs are as the same parts in *H. crassus*, except that there is a more evident impunctate space on the antero-internal part of the hind coxæ, and that the external teeth of the front tibiæ are more robust, the uppermost being very fully half as large as the second, and the external outline of the tibia from its base to the apex of the uppermost tooth being gently concave.

Port Augusta ; dug up from the soil at the roots of *Eucalyptus*.

#### H. ANCEPS, sp.nov.

Sat elongatus ; postice vix dilatatus ; sat convexus ; ferrugineus, antennis palpisque testaceis ; pilis fulvis vestitus ; clypeo crebre rugulose, capite postice crasse minus crebre, prothorace subtilius sat sparsim, elytris minus crebre subfortiter, pygidio subtiliter leviter sat crebre, punctulatis ; tibiis anticis externe minus fortiter dentatis ; labro clypeum sat late sat fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis.

[Long.  $4\frac{4}{5}$ , lat.  $2\frac{2}{5}$  lines.

Very closely allied to the preceding two species and also to *H. piger*. It differs from them as follows :—from *H. piger* by its polished and smoothly (and more sparingly) punctulate labrum, the much less close puncturation of its surface, and other characters ; from *H. crassus* by its wider prothorax (not much

less than twice as wide as long) of which the hinder angles are slightly more defined and the base is a little more strongly bisinuate while the surface is evidently more finely and decidedly less sparsely punctured, by the much finer (though still not particularly fine) puncturation of its elytra, by the very unusually fine and close puncturation of the middle part of its ventral segments, the somewhat larger lævigata space at the antero-internal part of the hind coxæ, and by the somewhat feebler external structure of its front tibiæ which have their lower two teeth smaller and evidently shorter than those of *H. crassus* (in all respects not specified above the description of *H. crassus* may be taken as applying to *H. anceps*); from *H. Augustæ* it differs by the much less close puncturation of the hinder part of the head as compared with that of the clypeus, by the somewhat less rotundity of the hind angles of the prothorax (this difference is only slight), by the fine close and strongly defined puncturation of the middle part of the ventral segments, and by the very much feebler external structure of the anterior tibiæ, as well as other characters.

Adelaide district; I find it in several collections, but not in numbers.

*H. SLOANEI*, sp.nov.

Sat elongatus; postice leviter dilatatus; sat convexus; ferrugineus, antennis palpisque testaceis; pilis pallide fulvis vestitus; clypeo crebre rugulose, capite postice crasse minus crebre, prothorace sat fortiter sat crebre (huic angulis posticis, certo visu, rectis), elytris squamose subrugulose sat crebre, pygidio (hoc breviter sparsius piloso) subtilius sparsius, punctulatis; tibiis anticis externe fortiter dentatis; labro clypeum sat anguste sat fortiter superanti; antennis 8-articulatis; unguiculis appendiculatis.

[Long.  $4\frac{1}{5}$ , lat.  $2\frac{1}{10}$  lines.

Clypeus moderately emarginate in front; "trilobed outline" of head well defined, the middle lobe appearing scarcely more than half as wide, and about the same length, as the lateral ones; surface of clypeus quite distinct from that of rest of head,

clypeal suture well impressed, and angulated in the middle. Prothorax nearly twice as wide as long, its base more than half again as wide as its front, which is moderately emarginate and very slightly bisinuate with moderate angles, the sides gently arched, the hind angles (viewed from a certain point above) rectangular, the base evidently bisinuate and rather narrowly and decidedly lobed hindward in the middle. The elytra are quite like those of *H. Augustæ*, the legs and underside also not appearing to differ noticeably from those of the same insect save that the uppermost external tooth of the anterior tibiæ is scarcely so strong.

This species bears a good deal of resemblance to *H. piger* (though it is much smaller), but differs by the nitid surface of its labrum; also its puncturation is throughout decidedly coarser. From other allied species it differs *inter alia* as follows:—from *crassus* by the very much closer puncturation of its upper surface; from *Augustæ* by the very much closer and coarser puncturation of its prothorax; from *anceps* by the rectangular (as viewed from a certain point) hind angles of its prothorax (those of *anceps* appearing from any point of view almost entirely rounded off), and different sculpture of the ventral segments; and from all the four just mentioned by the less width of the part of the labrum overtopping the clypeus, the middle lobe of the “trilobed outline” thus appearing narrower.

Melbourne; taken by Mr. Sloane (of Mulwala).

#### H. LATERITIUS, sp.nov.

Sat elongatus; sat convexus; pone medium leviter dilatatus; sat nitidus; rufo-ferrugineus; pilis adpressis minus dense vestitus; crebrius fortius subæqualiter punctulatus; labro clypeum fortiter minus late superanti; antennis 8-articulatis; unguiculis appendiculatis; coxis posticis abdominis segmento ventrali 2° haud longioribus.

[Long. 4, lat. 2½ lines.

Clypeus emarginate in front, without a continuous reflexed margin; “trilobed outline” of head having the middle lobe little

more than half as wide as the lateral ones, rather longer than these, and very strongly convex; clypeal suture gently arched; clypeus unusually convex,—or sub-gibbous, very distinct from hinder part of head. Prothorax about  $\frac{3}{5}$  again as wide as long; widest close to the base; its base nearly  $\frac{3}{5}$  again as wide as its front which is moderately emarginate with the angles fairly sharp and produced; its sides gently arched, and forming (viewed from above) feebly defined angles with the base which is moderately bisinuate and lobed hindward in the middle. Elytra with more or less feeble indications of striation (most examples showing at least traces of a sutural stria); their transverse wrinkling very strongly (at least in some lights) defined; lateral fringe normal; membranous apex moderate. The puncturation of the upper surface is about as close in all parts as (except the head where it is closer than) in *H. gracilipes*, but is a little finer, more squamose, and less strongly impressed. The hind coxæ are as nearly as possible the same length as the external margin of the 2nd ventral segment, and are very much shorter than the metasternum; like it they are rather coarsely punctulate,—sparsely in the middle, more closely at the sides. The puncturation of the ventral segments does not differ much from that of the metasternum except in being a little finer and nearly uniform all across. The ventral series consist of rather stout hairs and are well defined, but very slender and feeble in the middle. The hind femora are not very much wider than the intermediate and have their inner apical angle fairly prominent but not sharp; all the teeth of the anterior tibiæ are sharp and strong,—the uppermost about half the size of the second.

Adelaide.

#### H. JEJUNUS, sp.nov.

Sat elongatus; sat convexus; pone medium vix dilatatus; sat nitidus; testaceo-rufus, antennarum clava dilutiori; minus perspicue pubescens; capite (clypeo dense ruguloso excepto) prothoraceque (huic angulis posticis rotundatis) subtilius sparsius, elytris magis fortiter magis crebre, pygidio (hoc pilis perlongis sparsim vestito) crebre fortius, punctulatis; labro clypeum late

minus fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis ; coxis posticis abdominis segmento ventrali 2° haud longioribus. [Long.  $3\frac{1}{5}$ , lat.  $1\frac{3}{5}$  lines.

Clypeus feebly and widely emarginate in front, its reflexed margin not quite obsolete even in the middle ; “trilobed outline” of head very feebly visible from any point of view, the lobes appearing when viewed from the most favourable position to be scarcely developed, with the middle one very little narrower than the external ones ; clypeus not continuous with the rest of the head ; clypeal suture strongly marked and undulating. Prothorax a little less than twice as wide as long ; its base about  $\frac{1}{5}$  again as wide as its front, which is moderately emarginate with fairly prominent sharp angles ; its sides moderately curved, most divergent near the base ; its hind angles (viewed from above) much rounded off and not in the least directed hindward ; its base scarcely bisinuate and moderately lobed backward all across. Elytra with scarcely a trace even of a sutural stria ; their transverse wrinkling fine and inconspicuous ; their lateral fringe normal ; their membranous apex obscure. The sculpture of the upper surface is evidently coarser and more sparing than of *H. testaceus*, to which insect this species bears a close superficial resemblance. The hind coxæ are of the same length as the second ventral segment, being very much shorter than the metasternum which is closely and moderately strongly punctured at the sides, feebly and sparingly in the middle, —the hind coxæ being nearly impunctate, except the sparingly and coarsely punctulate lateral and hinder portions. The ventral segments are coarsely but not closely punctured,—much more feebly in the middle. The ventral series consist of fine hairs and are little conspicuous. The hind femora are but little wider than the intermediate, with their inner apical angle neither sharp nor very prominent. All the teeth of the anterior tibiæ are sharp and fairly large,—the uppermost scarcely half the size of the second.

Adelaide.

## H. DENTIPES, sp. nov.

Sat elongatus ; sat convexus ; pone medium leviter dilatatus ; sat nitidus ; piceo-ferrugineus, antennis palpisque testaceis ; vix pubescens ; clypeo crebre rugulose, capite postice sat fortiter sat crebre, prothorace (huic angulis posticis subrectis) subtiliter sat sparsim, elytris sparsius minus subtiliter, pygidio (hoc pilis perlongis sparsim vestito) fortiter minus crebre, punctulatis ; clypeo transversim concavo ; sutura clypeali fortiter carinata ; tibiaram anticarum dentibus externis perlongis ; labro clypeum late minus fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis ; coxis posticis abdominis segmento 2° subbrevioribus.

[Long. 4, lat. 2 lines.

Clypeus truncate in front with its front margin thickened in a triangularly elevated manner ; "trilobed outline" of head only fairly developed, the middle lobe appearing better developed and very little narrower than the lateral ones ; clypeus of very peculiar form, being subcompressed longitudinally in the middle (thus appearing rather abruptly convex down the middle) and at the same time concave transversely ; the triangularly elevated apex of the middle part of the clypeus seems to result from the truncation of the compressed portion mentioned above. The clypeal suture appears as a strongly elevated carina or "wheal" bisinuate in front, and at the sides reflexed and running up the head (while gradually sinking to the level of the surface) nearly to the level of the back of the eyes. The prothorax is twice as wide as long, its base a little more than  $\frac{1}{3}$  again as wide as its front which is moderately emarginate with fairly prominent sharp angles ; its sides diverging from front to behind middle, thence nearly straight to base, with which they form angles that viewed from a certain position above appear (quite sharply) rectangular ; the base distinctly (from some points of view *strongly*) bisinuate and moderately lobed in the middle. Elytra with faint suggestions of striation, their transverse wrinkling scarcely marked, their lateral fringes normal, their membranous apex obsolete. The puncturation of the upper surface in general is finer, smoother, more sparing



(and consequently more distinct) than in any of the common species hitherto described in this monograph. It is most like that of *H. testaceus* except in being very much less close. The hind coxæ are scarcely so wide as the second ventral segment and very much shorter than the metasternum. The sculpture and pubescence of the under surface scarcely differ from those of the preceding species (*H. jejunus*). The hind femora are decidedly wider than the intermediate, with their inner apical angle rather prominent but a good deal rounded off. The lower two teeth of the anterior tibiæ are unusually long and slender, the uppermost sharp but small (less than half the size of the second).

S. Australia (Balaclava).

#### H. DEBILIS, sp. nov.

Sat elongatus ; sat convexus ; pone medium leviter dilatatus ; sat nitidus ; piceo-ferrugineus, antennis palpisque dilutioribus ; vix pubescens ; clypeo crebre rugulose, capite postice sparsim subtiliter, prothorace minus sparsim minus subtiliter (huic angulis posticis subrectis), elytris confuse subsquamose sat crebre, pygidio (hoc longitudinaliter subcarinato) fortius crebrius, punctulatis ; tiliarum anticarum dentibus externis perlongis ; labro clypeum latissime minus fortiter superanti ; antennis 8-articulatis ; unguiculis appendiculatis. [Long.  $3\frac{2}{5}$ , lat.  $1\frac{4}{5}$  lines (vix).

Clypeus gently emarginate in front, its reflexed margin scarcely indicated in the middle part ; owing to the slight convexity of the upper outline of the labrum the appearance of a "trilobed outline" of the head is only obscurely attainable from a point of view far back and almost level with the surface of the head. The clypeus does not quite form an even surface with the rest of the head ; the clypeal suture is well impressed and nearly straight. The prothorax does not differ from that of the preceding except in its puncturation being a little less fine, and indeed in all other respects the description of *H. dentipes* may be taken as applying to this species with the following qualifications, viz., the sculpture

of the elytra is somewhat coarser (a little squamose in appearance) with more evident transverse wrinkling, and the uppermost tooth on the anterior tibiæ is somewhat more developed.

It will thus appear that the present insect is very close to the preceding, differing chiefly in the structure of the labrum, clypeus, and clypeal suture, and the very much finer and more sparing puncturation of the hinder part of the head. I think, however, that it is really distinct, as the differences just mentioned are not of a kind that appear to distinguish the sexes in this genus (I do not think that I have seen a male of either species), and moreover are accompanied by decided though slight differences in general sculpture, &c. It may be noted also that *H. debilis* is a more nitid species than *H. dentipes*.

S. Australia ; Sedan, taken by Mr. B. S. Rothe.